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the coast of Florida seemed to show that flies come down the wind from Cuba (ninety miles distant), and at times from the Marquesas Keys (twenty-four miles distant), and even from Key West, Fla., forty-six miles away. The maximum distance traveled by the house fly in these experiments was 13.14 miles. The tests proved that the injurious forms of fly life were not distributed on any large scale by artificial means, but rather that many of the far-flying species showed marked migratory habits.

#### IMPACT ON BRIDGES

A NEW instrument devised by the Bureau of Public Roads of the United States Department of Agriculture measures with scientific precision the effect of every shock and blow delivered by moving vehicles in crossing a bridge. Attached to any part of the bridge structure, this instrument makes a photographic record of the effect of the moving load. The amount of stretching or shortening of the part as a result of the shocks is represented by a fine black line on the photograph. No blow or shock can be delivered so quickly that the instrument will not record its effect. It has never before been possible to measure the effect of such blows. Engineers have long been able to calculate the effect of standing loads very exactly; but because of their inability to measure the effect of quickly delivered blows or impacts, they have never been able to proportion the various parts of a bridge with absolute assurance. It has been necessary to make a liberal allowance for this unknown quantity. In some cases the allowance has not been sufficient and the bridges have collapsed under moving loads. Many bridges still in service are probably too weak to withstand safely the sharp blows of swiftly moving vehicles, though they will safely carry the same vehicles at rest or moving at a slow speed. The familiar warning posted at the portals of a bridge: "Speed limit on this bridge 8 miles per hour," means that the design of the bridge to which it is attached is not strong enough to allow for impact. In the light of the recent experiments with motor trucks in which it was shown that

a swiftly moving motor truck may strike a blow equivalent to seven times its actual weight, it is rather surprising, the department road experts say, that failures have been so few. It is believed this new measuring instrument will soon do away with uncertainty. The knowledge gained by its use will enable the engineer to design bridges which are sure to hold up under fast-moving vehicles, and to build such bridges without undue waste of material and money.

#### THE TORONTO MEETING

THE section of medical sciences of the American Association has arranged the following program:

"Vice-presidential Address: "The past and the future of the medical sciences in the United States": Professor Joseph Erlanger, professor of physiology, Washington University.

"Hereditary factors in development": Dr. Charles B. Davenport, director of the Laboratories for Experimental Evolution of the Carnegie Institution.

"The metabolism of children in health and disease": Professor Harold Bailey, Cornell Medical School, N. Y.

"Newer aspects in dietetics of children": Dr. Alfred Hess, College of Physicians and Surgeons, New York.

"Movie exhibition of tonsil-adenoid clinics in operation": Dr. George W. Goler, health officer, Rochester, N. Y.

"The mental hygiene of children": Dr. C. M. Hincks, associate medical director, Canadian National Committee for Municipal Hygiene, Toronto, Canada.

PROFESSOR E. S. MOERE, secretary of the section of geology and geography, writes:

The section has prepared a very interesting program for the Toronto meeting and the officers of the section will be glad to hear at once from any of the members who wish to contribute. While the meetings of the other societies affiliated with the association are drawing many of the geologists and mineralogists from this side of the international boundary to Amherst, quite a number are going to take part in the Toronto meeting and the Canadian geologists are most heartily cooperating in preparation for the meeting. Many of the geologists of the Canadian Geological Survey and